

REMARKS

In response to the final Official Action of 28 April 2009, claims 1, 10, 12, 16, 20, 27, 29, and 31-35 have been amended.

First Aspect of the Invention

In particular, in independent claims 1, 29, 31, and 32, the feature that "both checkings are performed after said change of said association of said first communication unit has occurred" has been added, as disclosed in Fig. 2 (negotiation is performed after handover indication) and p. 8, last paragraph (it is stated that both checkings are performed "in" the exchange of at least one negotiation message, which negotiation message corresponds to message 10 in Fig. 2).

In dependent claim 10, the properties of the protocol being a circuit-switched, non-transparent protocol with automatic repeat request have been cancelled.

Second Aspect of the Invention

In all independent claims 12 and 33-35, the features that the parameter is related to a transmission characteristic/transmission delay and can be determined for each of the second communication units the third communication unit can be associated with have been cancelled. Instead, the feature that "the new second communication unit is associated with the same third communication unit with which the former second communication unit was associated" has been added, as for instance disclosed in the paragraph bridging pp. 11 and 12 or the description of the embodiment of Figure 3 on p. 22, first paragraph.

Dependent claims 16-24 have been adapted accordingly.

Third Aspect of the Invention

Dependent claim 27 has been slightly revised to improve clarity. Independent claims 26, 30, 36, and 37 also relate to this aspect of the invention and have not been amended (see below).

In summary, it is respectfully submitted that the claim amendments further clarify the invention and do not raise any new issues which requires further examination. Consequently, it is respectfully submitted that this amendment should be entered.

Subject-Matter of the Amended Independent Claims

The present invention thus relates to negotiation and re-negotiation of protocol parameters in the context of handovers in mobile communications systems. Applicant respectfully submits that the invention includes several novel and non-obvious elements, including but not limited to the following:

A first exemplary aspect, covered by independent claims 1, 29, 31, 32 and by dependent claims 5-11 and 28, is related to the case where a handover of a mobile station from a first MSC (Mobile Services Switching Centre, e.g. a UMTS-MSC) to a second MSC (e.g. a GSM-MSC) occurs, and proposes a negotiation of a protocol parameter (as for instance a re-sequencing timer) to be then started by said mobile station. Therein, the mobile station checks whether the protocol parameter is required for the operation of a protocol between the mobile station and the second MSC, and whether the parameter needs to be negotiated or re-negotiated and only starts the negotiation if both checks are positive. Therein, both checks are performed after the handover has taken place.

A second exemplary aspect, covered by independent claims 12, 33, 34 and 35, and by dependent claims 16-24 and 38, is related to the case where a handover of a mobile station from a first BTS that is connected to its MSC via a specific (e.g. IP-based) network to a second BTS that is connected to the same MSC via a different (e.g. a TDM-based) network, and proposes a negotiation of protocol parameters (such as an acknowledgement timer or a re-sequencing timer) after such a handover.

A third exemplary aspect is covered by independent claims 26, 30, 36 and 37 and by dependent claims 27 and 39, and is related to the case where a handover of a mobile station from a first MSC (e.g. a UMTS-MSC) to a second MSC (e.g. a GSM-MSC) may be possible at a later time. It is proposed that negotiation of a protocol parameter, for

instance a re-sequencing timer, is performed between the mobile station and the first MSC prior to the potential handover.

Claim Objections

At page 2 of the final Office Action, claim 23 is objected to because of informalities. The indicated informality was corrected in applicant's amendment mailed on January 22, 2009.

Claim Rejections - 35 USC §102

At pages 2-4, claims 12, 16, 21, 26, 30, and 33-37¹ are rejected under 35 USC §102(b) as anticipated in view of WO 01/65881 (hereinafter WO'881).

With respect to claims 12, and 33-35, it is asserted that WO'881 discloses a method and apparatus as claimed. For the reasons set forth below, applicant respectfully disagrees with regard to these claims as currently amended.

As stated above, amended independent claims 12, and 33-35 (according to the second aspect of the present invention) now clearly pertain to a handover situation where the second communication units change without changing the third communication unit. This covers for instance intra-MSC handovers, which are not addressed by the cited prior art (in particular WO'881) at all. The amended independent claims *inter alia* allow parameter negotiation or re-negotiation after such intra-MSC handovers, for instance to adapt a parameter that depends on the specific type of second communication unit (e.g. BTS) used after the handover.

Applicant thus considers that the claim amendments performed with respect to the second aspect of the present invention make the claims novel and non-obvious in view of the cited prior art.

Dependent claims 16, 21, and 22 are also believed to be allowable at least in view of their dependency from an independent claim which is believed to be allowable.

¹ Dependent claims 17-20 and 22 are also rejected as anticipated in view of WO'881 although not indicated as such at the top of page 3 of the final Office Action.

Dependent claims 17-20 all ultimately depend from dependent claim 16 and are believed to be allowable at least in view of such dependency.

With regard to independent claims 26, 30, 36, and 37, the Office also rejects said claims in view of WO'881. These claims are directed to the third aspect of the present invention as discussed below.

In the Office Action, the Office maintains its view that the subject-matter of independent claims 26, 30, 36, and 37 according to the third aspect of the present invention would be anticipated by WO'881. The Office again refers to page 13, lines 20-23 of WO'881, and to page 14, lines 1-3 of WO'881.

The passage of WO'881 on page 14, lines 1-3 only relates to a modify procedure performed between the mobile station and the target MSC (i.e., the "third communication unit of the second type" according to the claim language), but not the source MSC (i.e., the "third communication unit of the first type" according to the claim language). Therefore this passage is apparently not suited to show that WO'881 discloses a negotiation of parameters between the first communication unit (the mobile station) and the third communication unit of the first type (the source MSC).

Furthermore, with respect to the passage on page 13, lines 20-23 of WO'881, Applicant is still of the view that this passage cannot be simply interpreted literally with complete neglect of the remaining description of WO'881, and in particular not in neglect of the description of the very same embodiment to which the description on page 13, lines 20-23 belongs.

WO'881 only teaches that a UMTS-to-GSM handover is performed based on default values (see page 12, lines 11-15), i.e. there is no disclosure of an exchange of negotiation messages between the mobile station (first CU) and the source MSC 16 (third CU of the first type) before the handover. Only after the handover, is the mobile station allowed to modify the parameters via negotiation (see page 12, lines 15-16).

In the related passage on page 13, lines 20-23 of WO'881, it is stated that "the connection between the mobile station 6 and the [target] MSC 12 is negotiated based on default values before the actual handover". Therein, it is clear that the target MSC is meant, since in WO'881, the reference numeral "12" is consistently used for the target

MSC only, whereas the reference numeral "16" is only used for the source MSC.

In the passage on page 13, lines 20-23 of WO'881, the wording "negotiated based on default values before the actual handover" is not understood by a person of ordinary skill in the art in a way that an exchange of negotiation messages between the mobile station and the source MSC 16 takes place. This is due to the fact that, when default values are used at both the mobile station and the source MSC 16, exchanging negotiation messages would be a waste of bandwidth and power.

The wording "the connection between the mobile station 6 and the [target] MSC 12 is negotiated based on default values before the actual handover" is thus clearly to be understood as expressing that the parameter negotiation for the connection between the mobile station 6 and the target MSC 12 starts with default parameters before the actual handover, but is then completed by optional parameter re-negotiation (see page 12, lines 13-15 and the flowchart of Figure 3, third step and following steps of WO'881)).

Thus WO'881 is not suited to anticipate the subject-matter of independent claims 26, 30, 36, and 37.

Claim Rejections - 35 USC §103

At pages 5-10, claims 38 and 39 are rejected under 35 USC §103(a) in view of WO'881, while claims 1, 5-8, 28, 29, 31, and 32 are rejected under 35 USC §103(a) as unpatentable over WO'881 further in view of WO 00/44189 (hereinafter WO'189).

With respect to claims 1, 29, 31, and 32 according to the first aspect of the present invention, it is asserted that WO'881 discloses all of the features of the claimed invention except that it does not expressly disclose a checking performed by said first communication unit whether said parameter is required for the operation of said protocol between said protocol entities of said first communication unit and said third communication unit of said second type. WO'189 is relied upon for this feature. Applicant respectfully disagrees for the reasons set forth below.

More particularly, the Office asserts that all features of claim 1 are taught by WO'881, except the feature that "a checking [is] performed by said first communication unit whether said parameter is required for the operation of said protocol between said protocol entities of said first communication unit and said third communication unit of said second type".

The Office further holds the view that this feature is disclosed in WO'189, and that its integration into the method disclosed in WO'881 would be straightforward.

This view is respectfully contested.

WO'189 relates to interworking between different radio access networks. In this method, a radio transceiver device capable of operating with the first radio access network and the second radio access network is attached to the first radio access network. The method comprises the steps of detecting a service request, accessing information on conditions for the first and the second radio access network for giving sufficient support for a service requested by the service request, analysing whether or not the first radio access network and the second radio access network meets the conditions, and initiating a handover of the radio transceiver device from the first radio access network to the second radio access network if the second radio access network meets the conditions but the first radio access network does not. Thus, the method according to the present invention serves to support dual mode mobile stations and networks in such a way that the correct radio access which sufficiently supports a requested service is automatically obtained. Therein, a service may for instance be non-transparent circuit-switched services which are redundant in the 3rd generation radio access network, but which are widely used in the 2nd generation radio access network.

Firstly, it is not apparent at all that WO'881 would disclose that an initiative for the exchange of at least one negotiation message is started by a protocol entity of the first communication unit (the MS in WO'881). As already discussed in applicant's previous responses, WO'881 only discloses that the GSM MSC initiates this exchange of at least one negotiation message, but, in a consistent claim mapping, the GSM MSC can only be subsumed under the term "third communication unit of the second type".

This feature does also not appear to be disclosed by WO'189, which does not pertain to post-handover parameter negotiation or re-negotiation at all.

Secondly, WO'189 only discloses that either a network (in the first embodiment) or the mobile station (in the second embodiment) analyses a service request (see page 20, lines 17-28 of WO'189) and determines, based on this service request (and the parameters contained therein), if a handover to another radio access network is required (see page 21, lines 18-21 of WO'189).

WO'189 thus only relates to the decision whether a handover shall be performed or not, and not to potential parameter negotiation or re-negotiation after a handover, so that a person of ordinary skill in the art would not consider combining the disclosure of both WO'881 and WO'189.

Nevertheless, even when combining WO'881 and WO'189, a person of ordinary skill in the art would only yield a solution where a checking if parameters are required for post-handover protocol operation is performed prior to the actual handover.

In contrast, amended independent claims 1, 29, 31, and 32 according to the first aspect of the present invention have been clarified to state that both checkings, i.e., the checking if a parameter is required for protocol operation and the checking if negotiation/re-negotiation of this parameter is necessary, are performed after the handover. In contrast to what would be obtained when simply combining WO'881 and WO'189, amended independent claims 1, 29, 31, and 32 are directed to post-handover parameter negotiation and *inter alia* to improve bandwidth efficiency and power consumption of devices by initiating parameter negotiation only if the parameter is required for protocol operation and if it actually has to be negotiated/re-negotiated. This is clearly neither anticipated nor rendered obvious by prior art.

For all of the foregoing reasons, it is therefore respectfully submitted that claims 1, 29, 31, and 32 are not suggested by WO'881 in view of WO'189.

Furthermore, dependent claims 5-8 are also believed to be allowable in view of this cited art at least in view of their ultimate dependency from amended claim 31.

Dependent claims 38 and 39 are also believed to be allowable at least in view of their dependency from claims 12 and 26 respectively.

Allowable Subject Matter

Applicant notes that claims 10, 11, and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims. These claims are believed to be allowable in their current form in view of the comments above concerning the allowability of the claims from which these claims ultimately depend.

In view of the foregoing, it is respectfully submitted that the present application as amended is in condition for allowance and such action is earnestly solicited.

The undersigned respectfully submits that no fee is due for filing this Amendment After Final. The Commissioner is hereby authorized to charge to deposit account 23-0442 any fee deficiency required to submit this paper.

Respectfully submitted,

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